液晶显示器

底板	型号
WSF2	S22A450BW
WDF3	S24A450BW / S24A450B
WGF3	S19A450BW
SXL2	S19A450BR
WGF2	S19A200NW / S22A200B

维　修　手　册

薄膜液晶显示器

S22A450BW / S24A450BW / S24A450B / S19A450BW / S19A450BR / S19A200NW / S22A200B

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1. Precautions

1-1. Safety Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1-1. Warnings

1. For continued safety, do not attempt to modify the circuit board.
2. Disconnect the AC power and DC power jack before servicing.

1-1-2. Servicing the LCD Monitor

1. When servicing the LCD Monitor, Disconnect the AC line cord from the AC outlet.
2. It is essential that service technicians have an accurate voltage meter available at all times. Check the calibration of this meter periodically.

1-1-3. Fire and Shock Hazard

Before returning the monitor to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistorcapacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check (Figure 1-1):
   WARNING : Do not use an isolation transformer during this test.
   Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).

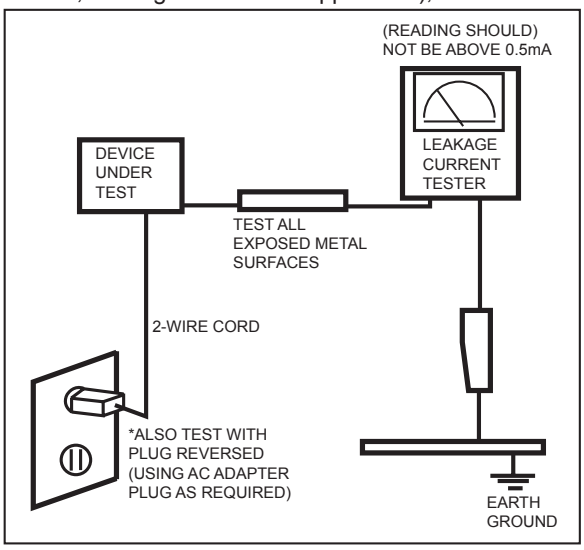


Figure 1-1. Leakage Current Test Circuit

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts.
   The current measured should not exceed 0.5 milliamp.
   Reverse the power-plug prongs in the AC outlet and repeat the test.

1-1-4. Product Safety Notices

Some electrical and mechanical parts have special safetyrelated characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by ⚠ on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1-2. Servicing Precautions

WARNING: An electrolytic capacitor installed with the wrong polarity might explode.
Caution: Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.
Note: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

1-2-1 General Servicing Precautions

1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to:
   (a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON.
   Connect an insulation resistance meter (500 V) to theblades of the AC plug.
   The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3. Static Electricity Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   Caution: Be sure no power is applied to the chassis or circuit and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

1-4. Installation Precautions

1. For safety reasons, more than two people are required for carrying the product.
2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the highvoltage cable or the antenna falling over may cause fire or electric shock.
7. When installing the product, leave enough space (10cm) between the product and the wall for ventilation purposes. A rise in temperature within the product may cause fire.

Memo

2. Product specifications

2-1. Feature & Specifications

Feature
▶ Panel Specifications: 250 cd/m^2, 5 ms, CR 1000:1, 170/160 (CR>10) ▶ DPMS: Typical 0.3W ▶ Off-Timer function for reducing standby power usages ▶ DVI with HDCP (wide model) ▶ Picture;a screen size desire ▶ Supported Magic Bright3 / Eco Saving / Magic Angle / off timer / Image Size / Key Repeat Time

Specifications	
Item	**Description**
Model	**S22A450BW**
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally white transmissive
	22” Wide viewable 0.282(H)x0.282(V)mm pixel pitch
Scanning Frequency	Horizontal : 30kHz ~ 81kHz (Automatic) Vertical: 56Hz ~ 75Hz
Display Colors	16.7 Million colors
Maximum resolution	Horizontal: 1680 Pixels Vertical: 1050 Pixels
Input Signal	Analog / DVI digital with HDCP
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green Level: TTL level
Maximum Pixel Clock rate	164Mhz
Active Display (Horizontal/Vertical)	473.76(H) x 296.1(V)
AC power voltage & Frequency	AC 100V~130V, 60Hz & AC, 200V~240V 50Hz
Power Consumption	MAX 27 W / Typical 22 W
Dimensions Set (W x H x D)	508 x 380 x 201 mm (With Stand) 508 x 344 x 50 mm (Without Stand)
Weight Set	4.6 kg (Product) 6.1 kg (Shipment)
Environmental Considerations	Operating Temperature: 10°C ~ 50°C Operating Humidity : 10% ~ 90% Storage Temperature: -20°C ~ 45°C Storage Humidity: 5% ~ 90%
Note: Designs and specifications are subject to change without prior notice.	

Feature
▶ Panel Specifications: 250 cd/m^2, 5 ms, CR 1000:1, 170/160 (CR>10) ▶ DPMS: Typical 0.3W ▶ Off-Timer function for reducing standby power usages ▶ DVI with HDCP (wide model) ▶ Picture;a screen size desire ▶ Supported Magic Bright3 / Eco Saving / Magic Angle / off timer / Image Size / Key Repeat Time

Specifications		
Item	**Description**	
Model	**S24A450BW**	**S24A450B**
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally white transmissive	
	24” wide viewable 0.270 (H) X 0.270 (V)mm pixel pitch	24” wide viewable 0.276 (H) X 0.276 (V)mm pixel pitch
Scanning Frequency	Horizontal : 30kHz ~ 81kHz (Automatic) Vertical: 56Hz ~ 75Hz	
Display Colors	16.7 Million colors	
Maximum resolution	Horizontal: 1920 Pixels Vertical: 1200 Pixels	Horizontal: 1920 Pixels Vertical: 1080 Pixels
Input Signal	Analog / DVI digital with HDCP	
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green Level: TTL level	
Maximum Pixel Clock rate	170MHz	
Active Display (Horizontal/Vertical)	518.4(H) X 324.0(V)mm	531.36(H) X 298.89(V) mm
AC power voltage & Frequency	AC 100V~130V, 60Hz & AC, 200V~240V 50Hz	
Power Consumption	34 W (Typical)	
Dimensions Set (W x H x D)	560 x 400 x 201 mm (With Stand) 560 x 374 x 50 mm (Without Stand)	570 x 387 x 201 mm (With Stand) 570 x 347 x 50 mm (Without Stand)
Weight Set (After installation Stand)	5.1 kg (Product) 6.7 kg (Shipment)	5.2 kg (Product) 6.8 kg (Shipment)
Environmental Considerations	Operating Temperature: 10°C ~ 50°C Operating Humidity : 10% ~ 90% Storage Temperature: -20°C ~ 45°C Storage Humidity: 5% ~ 90%	
Note: Designs and specifications are subject to change without prior notice.		

Feature
▶ Panel Specifications: 250 cd/m^2, 5 ms, CR 1000:1, 170/160 (CR>10) ▶ DPMS: Typical 0.3W ▶ Off-Timer function for reducing standby power usages ▶ DVI with HDCP (wide model) ▶ Picture;a screen size desire ▶ Supported Magic Bright3 / Eco Saving / Magic Angle / off timer / Image Size / Key Repeat Time

Specifications		
Item	**Description**	
Model	**S19A450BW**	**S19A450BR**
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally white transmissive	
	19” wide viewable 0.2835(H) X 0.2835 (V) mm pixel pitch	19” normal viewable 0.294(H) X 0.294(V)mm pixel pitch
Scanning Frequency	Horizontal : 30kHz ~ 81kHz (Automatic) Vertical: 56Hz ~ 75Hz	
Display Colors	16.7 Million colors	
Maximum resolution	Horizontal: 1440 Pixels Vertical: 900 Pixels	Horizontal: 1280 Pixels Vertical: 1024 Pixels
Input Signal	Analog / DVI digital with HDCP	
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green Level: TTL level	
Maximum Pixel Clock rate	140MHz	
Active Display (Horizontal/Vertical)	408.24(H) X 255.15(V)	376.31H) X 301.06(V)
AC power voltage & Frequency	AC 100V~130V, 60Hz & AC, 200V~240V 50Hz	
Power Consumption	20 W	
Dimensions Set (W x H x D)	443 x 377 x 201 mm (With Stand) 443 x 302 x 50 mm (Without Stand)	413 x 401 x 201 mm (With Stand) 413 x 348 x 50 mm (Without Stand)
Weight Set (After installation Stand)	4.3 kg (Product) 5.6 kg (Shipment)	4.7 kg (Product) 5.9 kg (Shipment)
Environmental Considerations	Operating Temperature: 10°C ~ 50°C Operating Humidity : 10% ~ 90% Storage Temperature: -20°C ~ 45°C Storage Humidity: 5% ~ 90%	
Note: Designs and specifications are subject to change without prior notice.		

Feature
▶ Panel Specifications: 250 cd/m^2, 5 ms, CR 1000:1, 170/160 (CR>10) ▶ DPMS: Typical 0.3W ▶ Off-Timer function for reducing standby power usages ▶ DVI with HDCP (wide model) ▶ Picture;a screen size desire ▶ Supported Magic Bright3 / Eco Saving / Magic Angle / off timer / Image Size / Key Repeat Time

Specifications	
Item	**Description**
Model	**S19A200NW**
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally white transmissive
	19” wide viewable 0.2835(H) X 0.2835 (V) mm pixel pitch
Scanning Frequency	Horizontal : 30kHz ~ 81kHz (Automatic) Vertical: 56Hz ~ 75Hz
Display Colors	16.7 Million colors
Maximum resolution	Horizontal: 1440 Pixels Vertical: 900 Pixels
Input Signal	Analog / DVI digital with HDCP
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green Level: TTL level
Maximum Pixel Clock rate	136.75 Mhz
Active Display (Horizontal/Vertical)	408.24(H) X 255.15(V)
AC power voltage & Frequency	AC 100V~130V, 60Hz & AC, 200V~240V 50Hz
Power Consumption	20 W
Dimensions Set (W x H x D)	443 x 395 x 201 mm (With Stand) 443 x 302 x 50 mm (Without Stand)
Weight Set (After installation Stand)	3.1 kg (Product) 4.2 kg (Shipment)
Environmental Considerations	Operating Temperature: 10°C ~ 50°C Operating Humidity : 10% ~ 90% Storage Temperature: -20°C ~ 45°C Storage Humidity: 5% ~ 90%
Note: Designs and specifications are subject to change without prior notice.	

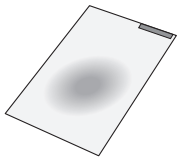
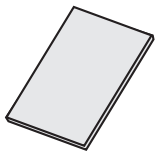
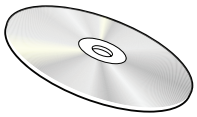
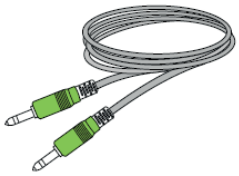
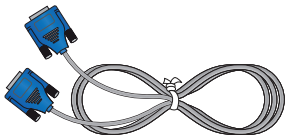
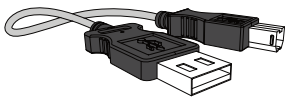
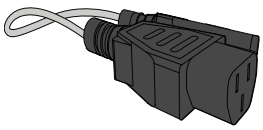
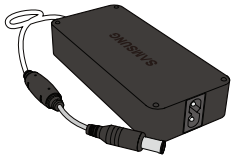
Feature
▶ Panel Specifications: 250 cd/m^2, 5 ms, CR 1000:1, 170/160 (CR>10) ▶ DPMS: Typical 0.3W ▶ Off-Timer function for reducing standby power usages ▶ DVI with HDCP (wide model) ▶ Picture;a screen size desire ▶ Supported Magic Bright3 / Eco Saving / Magic Angle / off timer / Image Size / Key Repeat Time

Specifications	
Item	**Description**
Model	**S22A200B**
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally white transmissive
	22” wide viewable 0.248(H) X 0.248(V) mm pixel pitch
Scanning Frequency	Horizontal : 30kHz ~ 81kHz (Automatic) Vertical: 56Hz ~ 75Hz
Display Colors	16.7 Million colors
Maximum resolution	Horizontal: 1920 Pixels Vertical: 1080 Pixels
Input Signal	Analog / DVI digital with HDCP
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green Level: TTL level
Maximum Pixel Clock rate	148.5 Mhz
Active Display (Horizontal/Vertical)	476.64(H) X 268.11(V)
AC power voltage & Frequency	AC 100V~130V, 60Hz & AC, 200V~240V 50Hz
Power Consumption	25 W
Dimensions Set (W x H x D)	513 x 410 x 201 mm (With Stand) 513 x 317 x 50 mm (Without Stand)
Weight Set (After installation Stand)	3.6 kg (Product) 5 kg (Shipment)
Environmental Considerations	Operating Temperature: 10°C ~ 50°C Operating Humidity : 10% ~ 90% Storage Temperature: -20°C ~ 45°C Storage Humidity: 5% ~ 90%
Note: Designs and specifications are subject to change without prior notice.	

2-2. Spec Comparison to the Old Models

Model	[SA450] S22A450BW	[CREAM] SN1933
Design		
Resolution	**1680 X 1050**	1600 X 900
Input	Analog / DVI digital with HDCP	Analog / DVI digital with HDCP (2033SN : Analog only)
Response Time	5ms(B to B)	5ms(B to B)
Viewing Angle	170/160(CR>10)	170/160(CR>10)
Brightness	**250 cd/m²**	300 cd/m²
Contrast	**MEGA (DCR)**	20000:1(DCR)
MagicBright	**5 step**	7 step
Feature	**Magic Color** **Image Size** **Magic Bright3** **Magic Tune (Premium)** **ECO Saving** **Magic Angle** **Key Repeat Time**	Magic Color Color Effect Image Size Magic Bright2 Magic Tune (Premium)

2-3. Accessories

Product	Description	Code. No	Remark
	Manual Flyer- Adapter Guide	BN68-03162J	Samsung Electronics Service center
	Warranty Card (Not available in all locations)	BN68-03548A	
	User's Guide	BN46-00080A	
	Stereo Cable	BN39-00061C	
	D-Sub(15 Pin) Cable	BN39-00244H	
	USB Cable	BN39-00397C	
	Power Cord	3903-000382	
	Adapter	BN44-00394F	

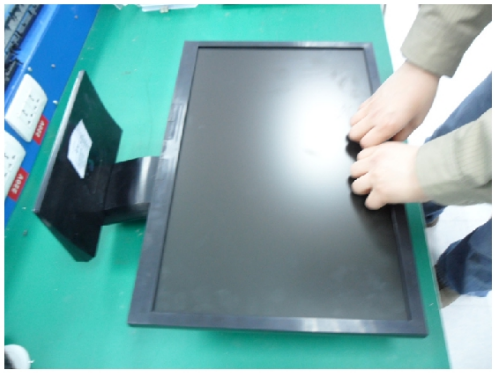
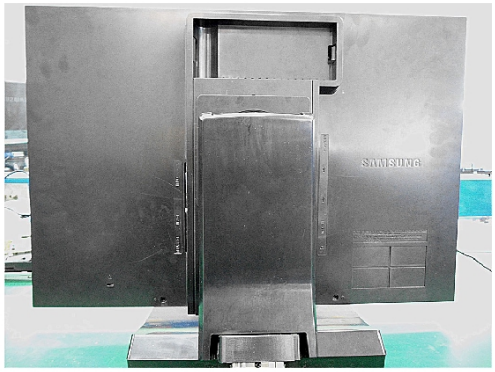
3.拆卸和重新组装

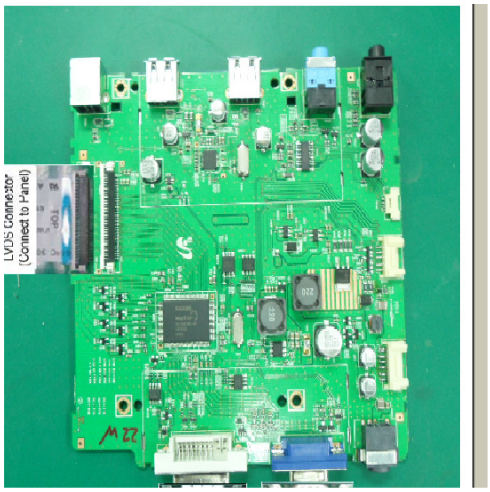
维修手册的这一章叙述本显示器的拆卸和重新组装步骤。

⚠ **警告：本显示器包含静电敏感器件。处理这些部件时应小心。**

3-1. 拆卸

⚠ **小心：1.在进行拆卸前，请关闭显示器。**
2.在拆卸显示器时，请勿使用除提供的开启工具以外的其它金属工具。
3.请按下述步骤小心拆卸本显示器。

说明	图片	螺钉
1.翻转显示器并将手插入到显示器顶部中央位置，按照如图箭头所示方向拆卸前盖。 如图所示，分离前盖侧部到指示线位置。		
2.再次翻转显示屏拆卸后盖。 * 对于同类型号，主印刷电路板仅有一个D-SUB插孔无DVI插孔。		
3.拆卸 LVDS、灯接线和功能线后拆卸护板盖。 * 对于同类型号，主印刷电路板仅有一个D-SUB插孔无DVI插孔。		

说明	图片说明	螺钉
4.拆卸 LED 屏板。		
5.从 PCB 支撑架上将主印刷电路板卸下。 * 对于同类型号，主印刷电路板仅有一个D-SUB插孔无DVI插孔。		

※重新组装步骤与拆卸步骤相反。

4 故障排除

4-1. 故障排除

1. 在进行维修前，按如下方式设置定制模式：

S22A450BW

- 分辨率：1680×1050
- 水平频率：65 kHz
- 竖直频率：60 Hz

S24A450BW

- 分辨率：1920×1200
- 水平频率：74.5 kHz
- 竖直频率：60 Hz

S24A450B

- 分辨率：1920×1080
- 水平频率：67 kHz
- 竖直频率：60 Hz

S19A450BW

- 分辨率：1440 x 900
- 水平频率：55.9 KHZ
- 竖直频率：60 HZ

S19A450BR

- 分辨率：1280 x 1024
- 水平频率：64 KHZ
- 竖直频率：60 Hz

S19A200NW

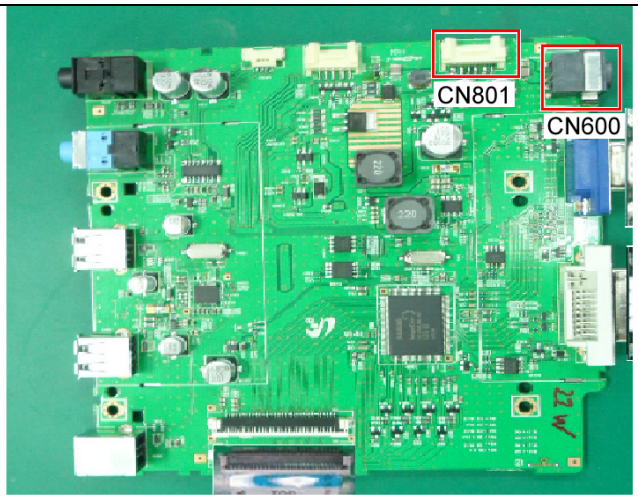
- 分辨率：1440 x 900
- 水平频率：55.9 KHZ
- 竖直频率：60 HZ

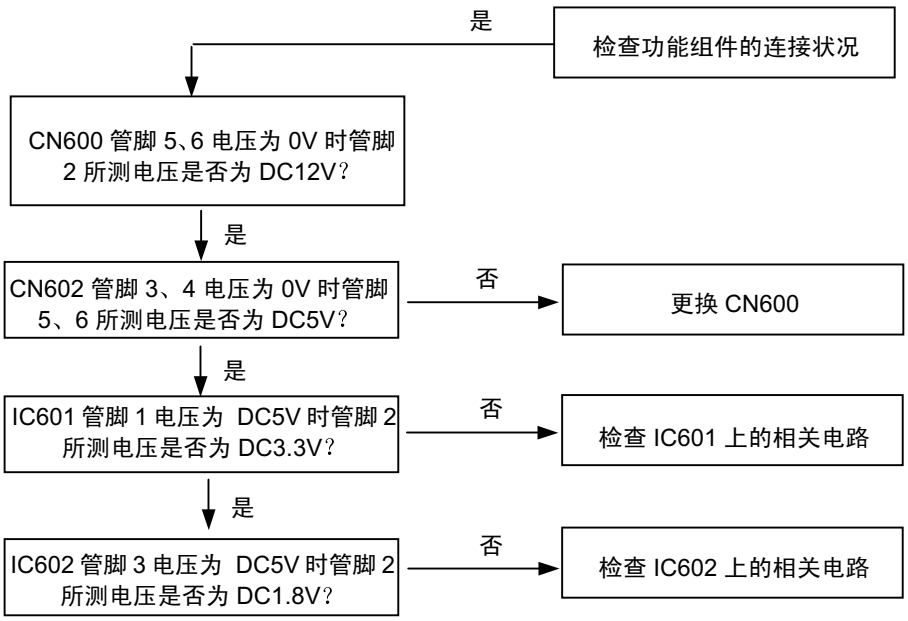
S22A200B

- 分辨率：1920 x 1080
- 水平频率：67.5 KHZ
- 竖直频率：60 HZ

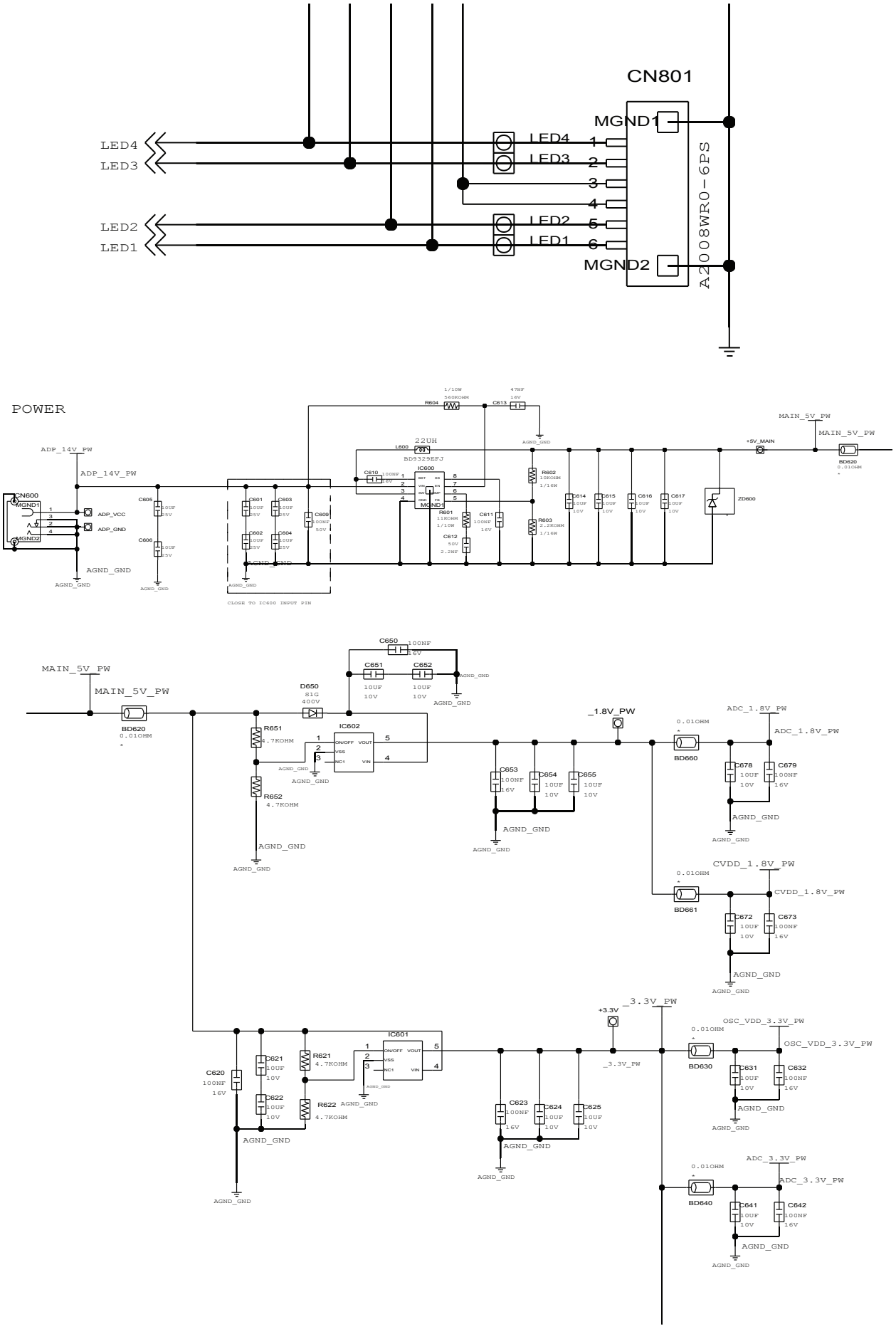
2. 如果没有图像出现，确保正确连接了电源线。
3. 检查以下电路：
   - 没有光栅出现：功能印刷电路板组件、主印刷电路板组件
   - 5V 形成，但没有画面：主印刷电路板组件
4. 按下菜单键并按住“↵（确认/来源）”键五（5）秒，显示器会自动进入工厂复位。

4-2 未开通电源时

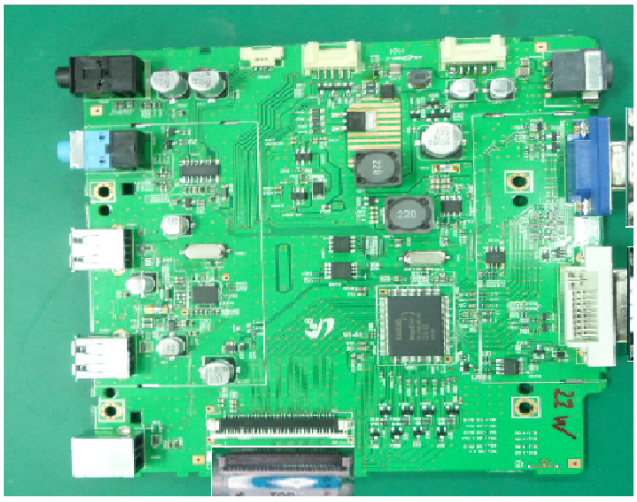
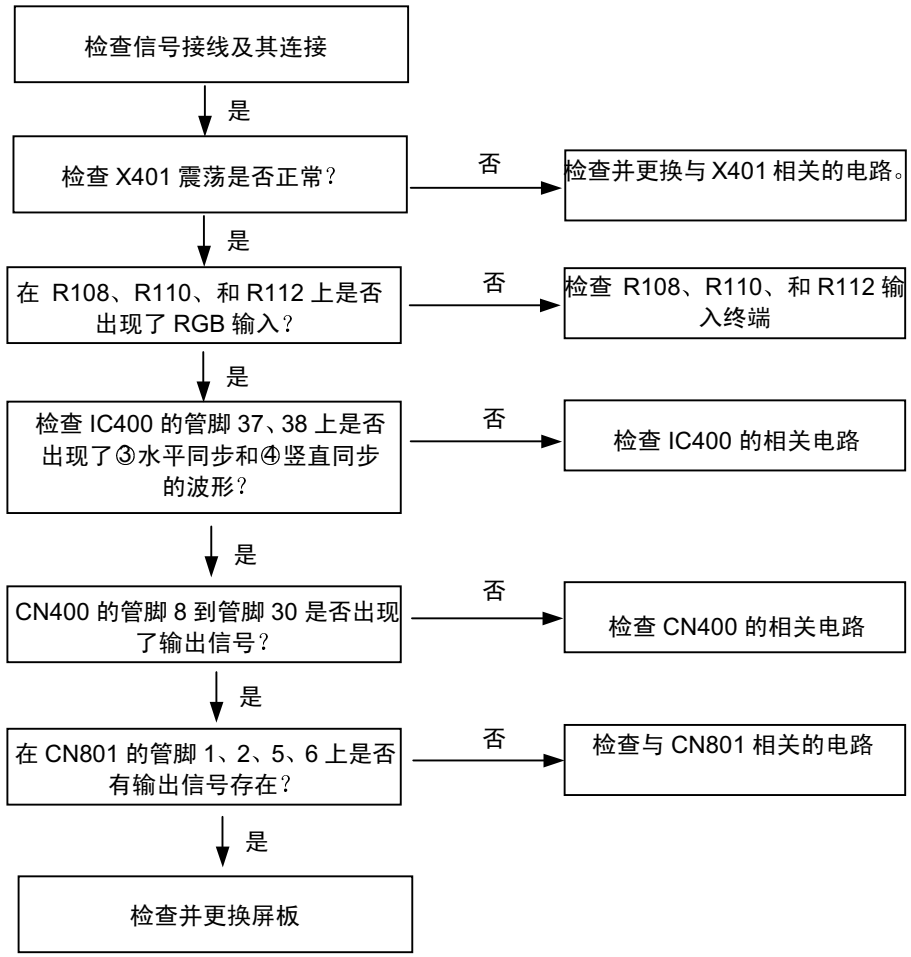
<table>
<tr><td>征兆</td><td>-连接电源后打开电源按钮时，显示器前部的 LED 指示灯不运行。</td></tr>
<tr><td>主要检查点</td><td>-检查 Q802 保险丝和 Q802 输出功率。
-检查 CN801 和显示器内部主板的连接情况。
-检查主板电源部分，同时检查其它输出终端是否有任何输出异常。</td></tr>
<tr><td>诊断</td><td> 

主板前部
* 对于同类型号，主印刷电路板仅有一个 D-SUB 插孔无 DVI 插孔。
 
</td></tr>
<tr><td>注意</td><td>在主板工作之前确保电源断开。</td></tr>
</table>

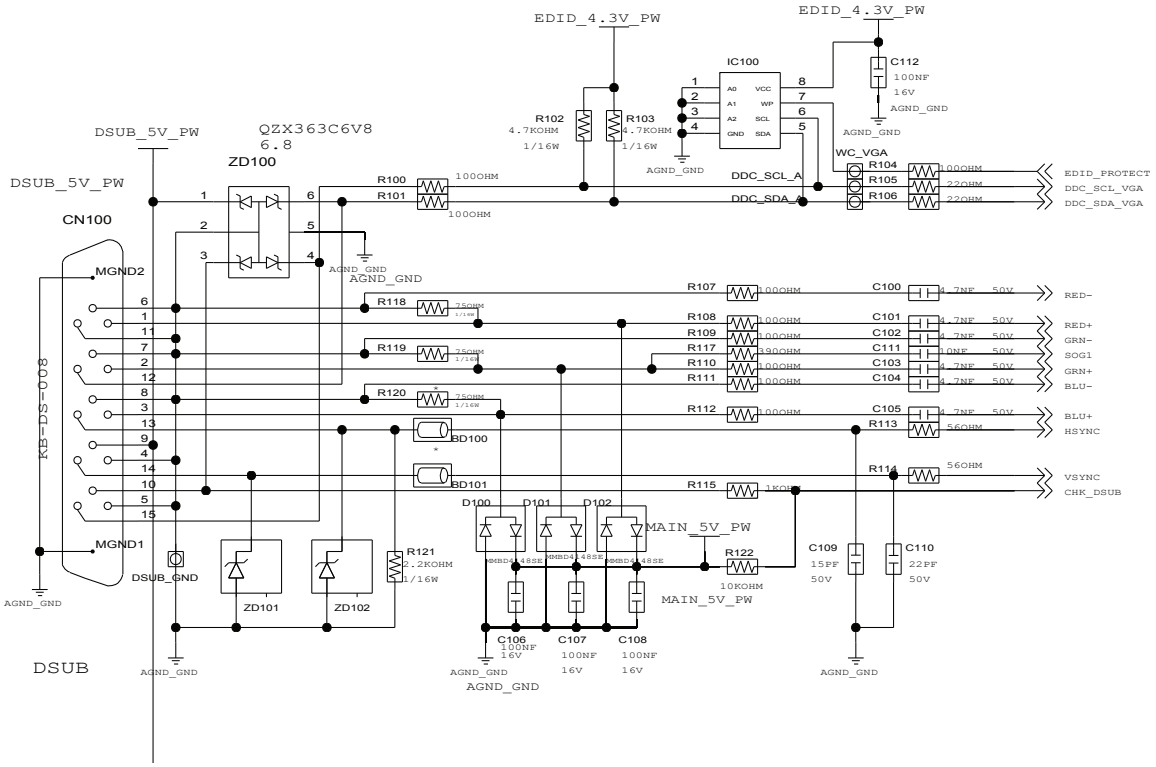
4-2-1 电源未开通时的电路图

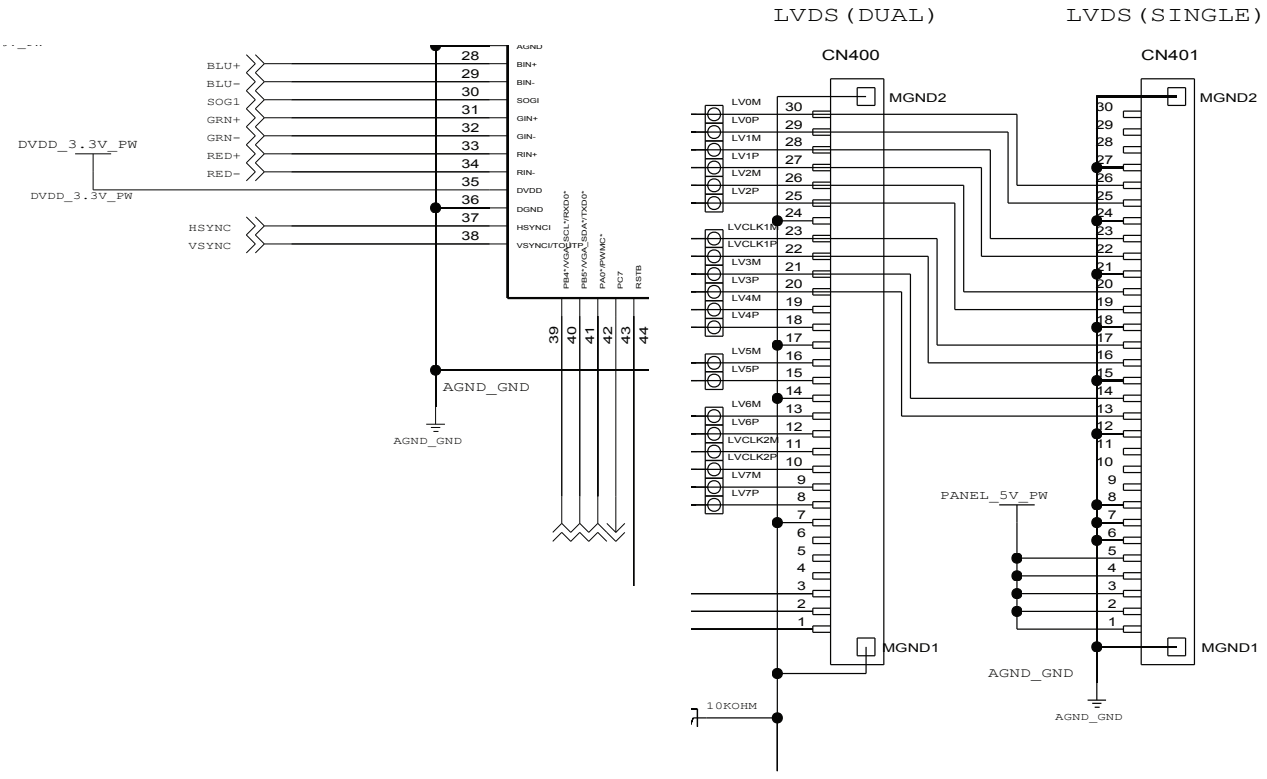


4-3. 当显示器黑屏时（模拟）

征兆	-尽管 LED 电源打开，但连接 VGA 接线时，屏幕仍为黑屏。
主要检查点	-检查 D-SUB 接线的连接情况。 -检查 LVDS 接线是否正确连接到面板上。 -检查面板灯连接器是否正确连接到了主板上。
诊断	 主板前部 * 对于同类型号，主印刷电路板仅有一个 D-SUB 插孔无 DVI 插孔。 
注意	在主板工作之前确保电源断开。

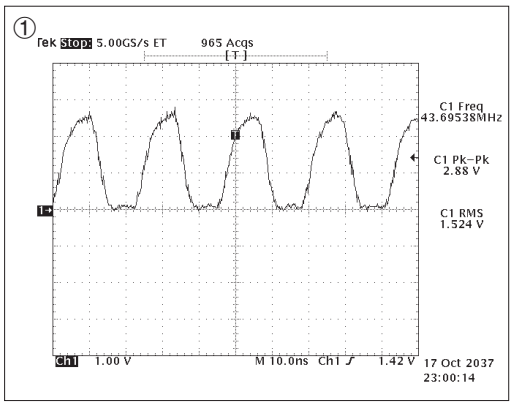
4-3-1. 出现黑屏时的电路图（模拟）



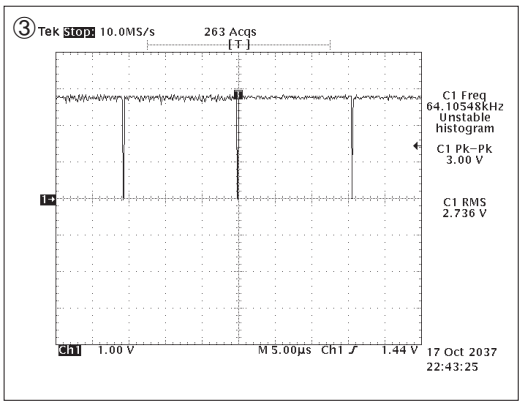


4-3-2.无显示时的波形图（模拟）

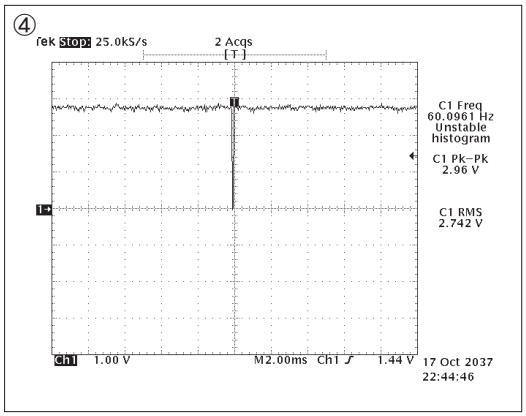
①



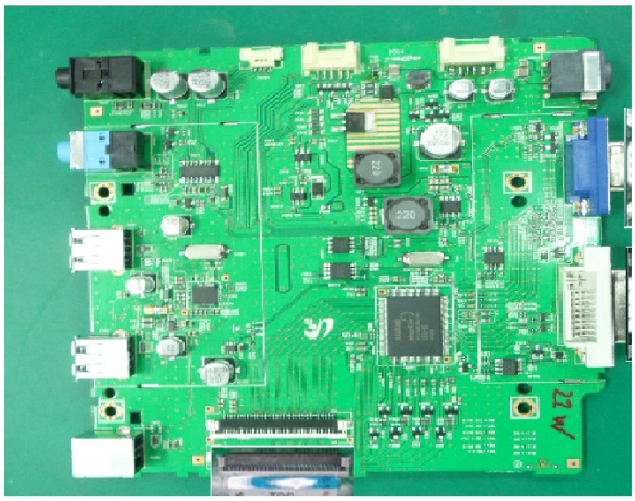
③



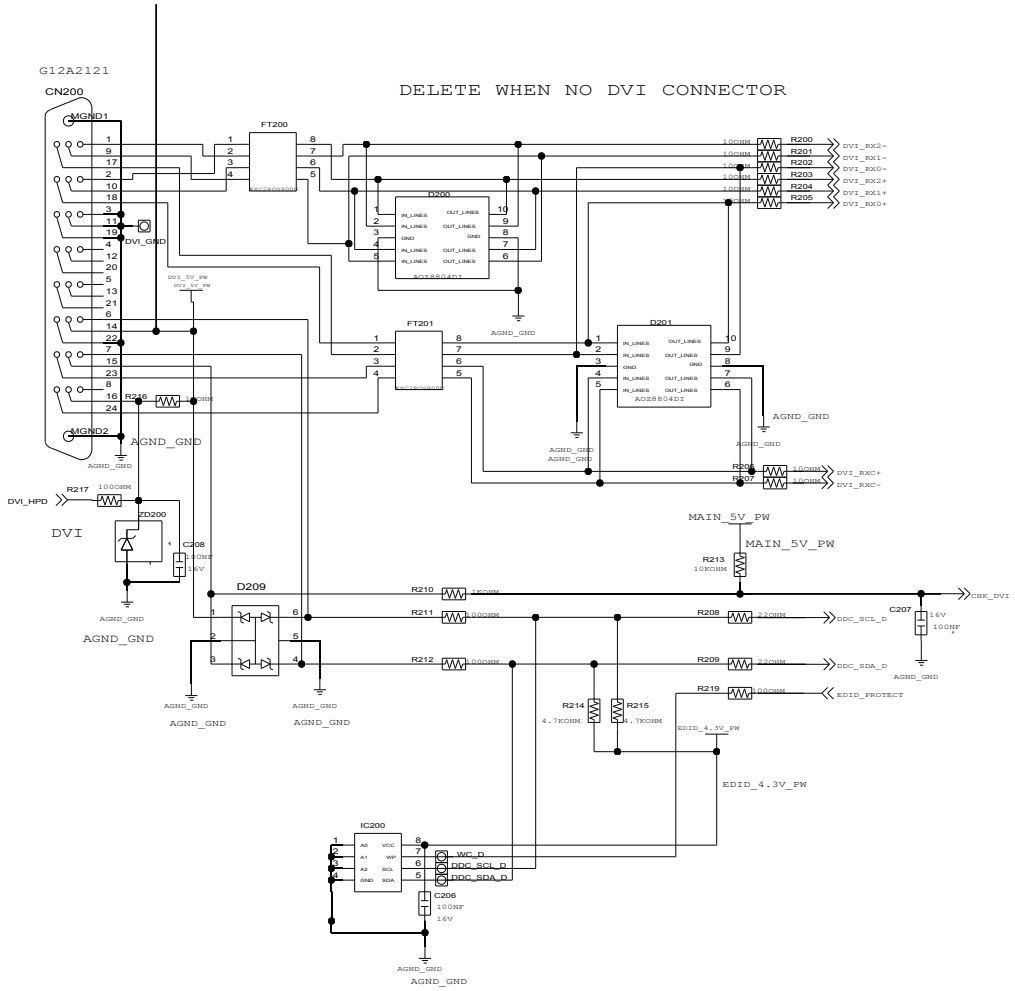
④

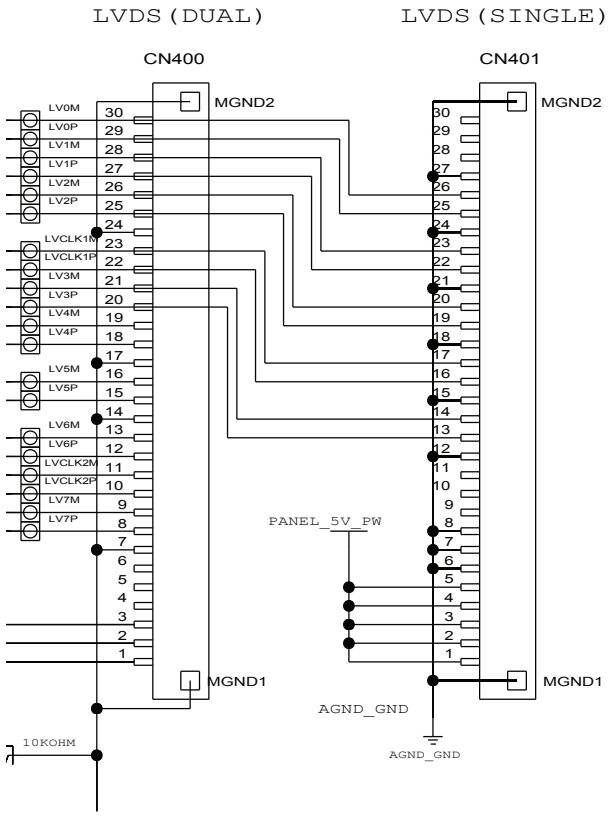


4-4. 当显示器黑屏时（数字）

征兆	-尽管 LED 电源打开，但连接 DVI 接线时，屏幕仍为黑屏。
主要检查点	-检查 DVI 接线的连接情况。 -检查 LVDS 接线是否正确连接到面板上。 -检查面板灯连接器是否正确连接到了主板上。
诊断	 主板前部 * 对于同类型号，主印刷电路板仅有一个 D-SUB 插孔无 DVI 插孔。 检查信号接线及其连接 ↓ 是 检查 X401 震荡是否正常？ → 否 → 检查并更换与 X401 相关的电路。 ↓ 是 在 R208、R209、和 R210 上是否出现了 RGB 输入？ → 否 → 检查 R208、R209、和 R210 输入终端 ↓ 是 CN400 的管脚 8 到管脚 30 是否出现了输出信号？ → 否 → 检查 CN400 的相关电路 ↓ 是 在 CN801 的管脚 1、2、5、6 上是否有输出信号存在？ → 否 → 检查与 CN801 相关的电路 ↓ 是 检查并更换屏板
注意	在主板工作之前确保电源断开。

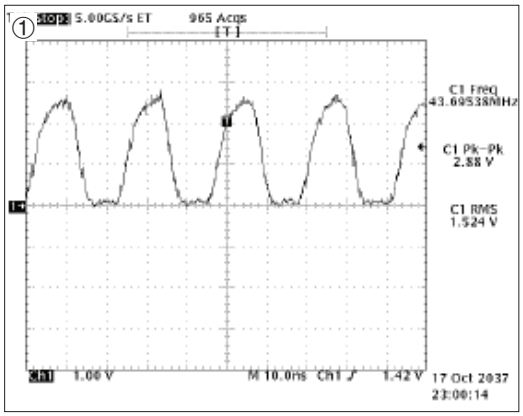
4-4-1. 出现黑屏时的电路图（数字）



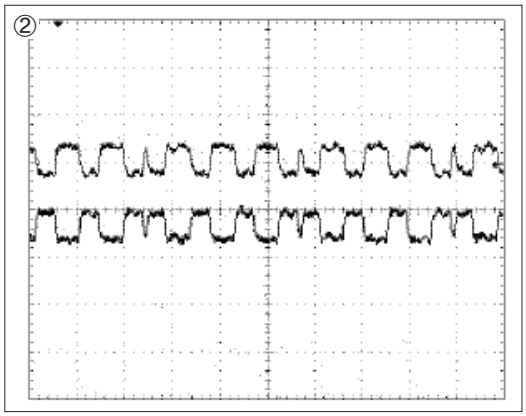


4-4-2.无显示时的波形图（数字）

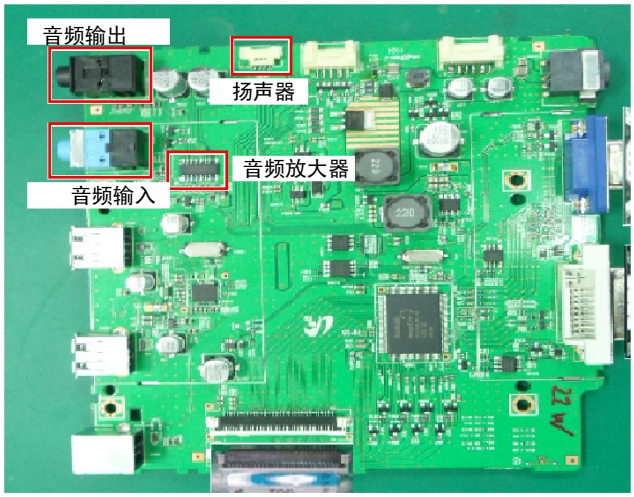
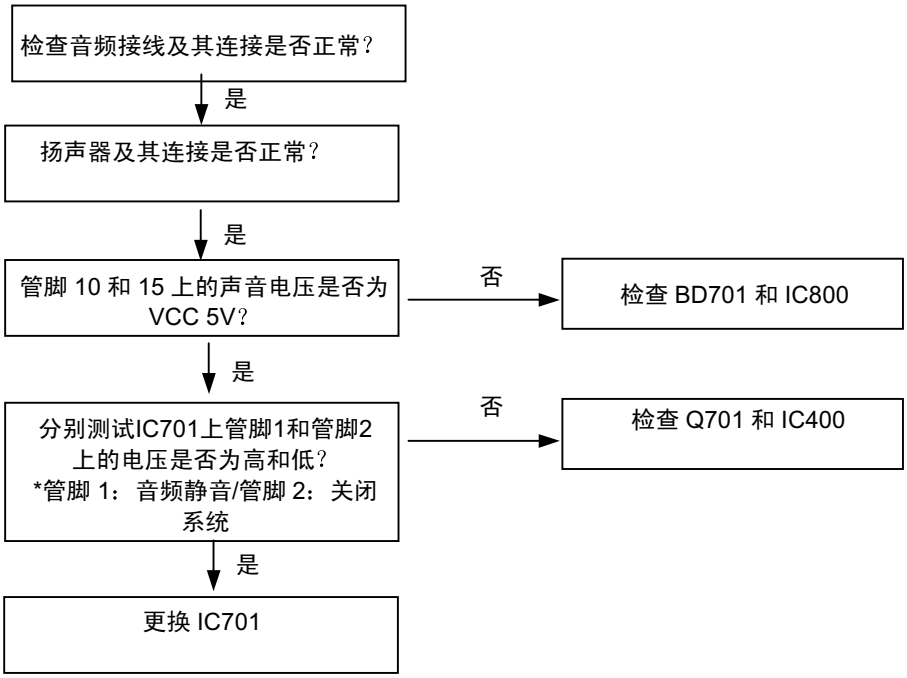
①



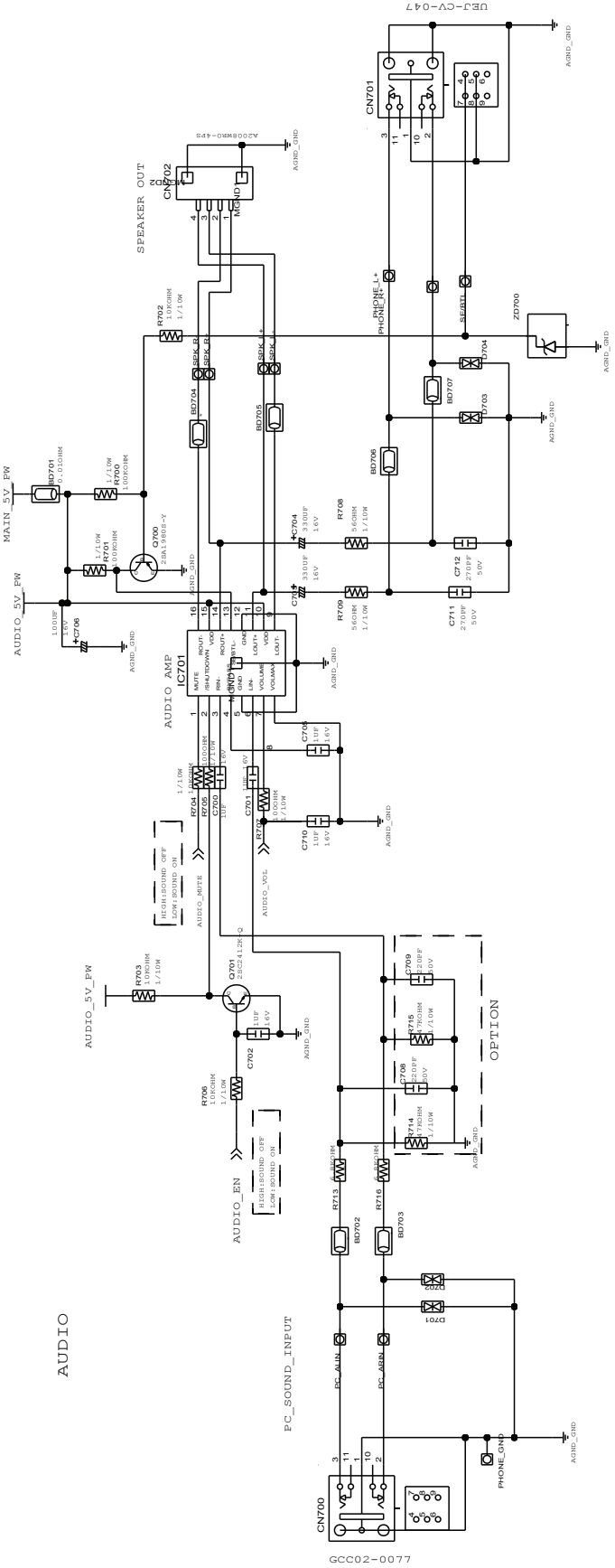
②



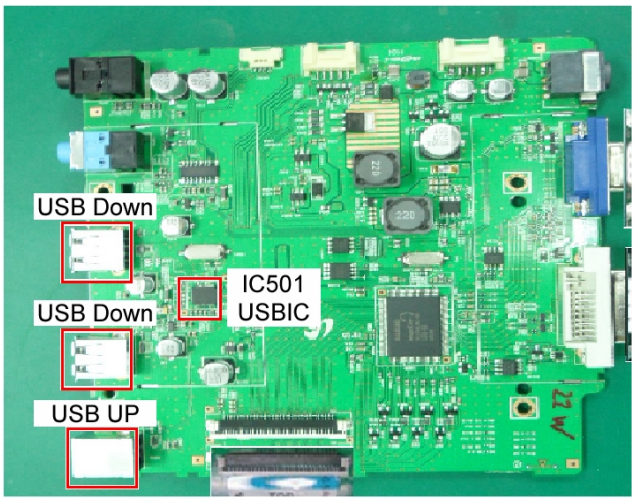
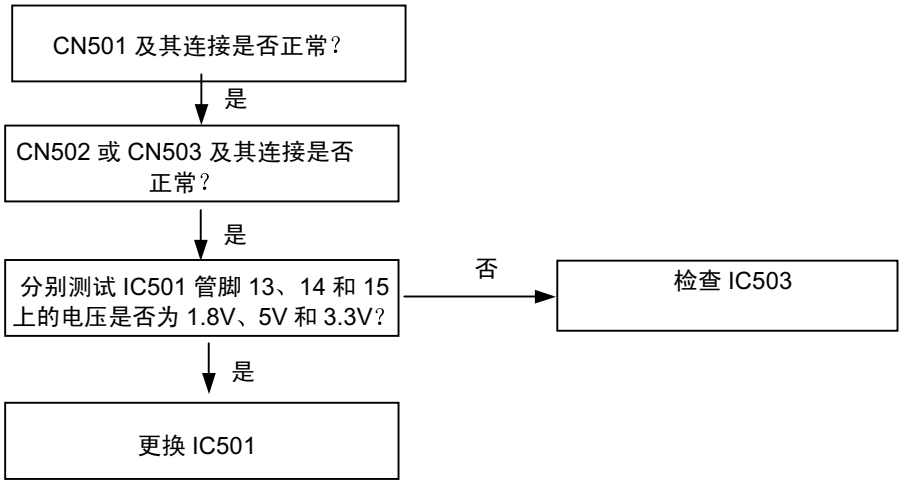
4-5 当扬声器或耳机无声音输出时

征兆	-尽管屏幕显示图像，但是扬声器或耳机无声音输出。
主要检查点	-检查音频接线及其连接情况。 -检查耳机是否正确连接。 -检查扬声器接线是否正确连接到了主板上。
诊断	 主板前部 * 对于同类型号，主印刷电路板仅有一个 D-SUB 插孔无 DVI 插孔。 
注意	在主板工作之前确保电源断开。

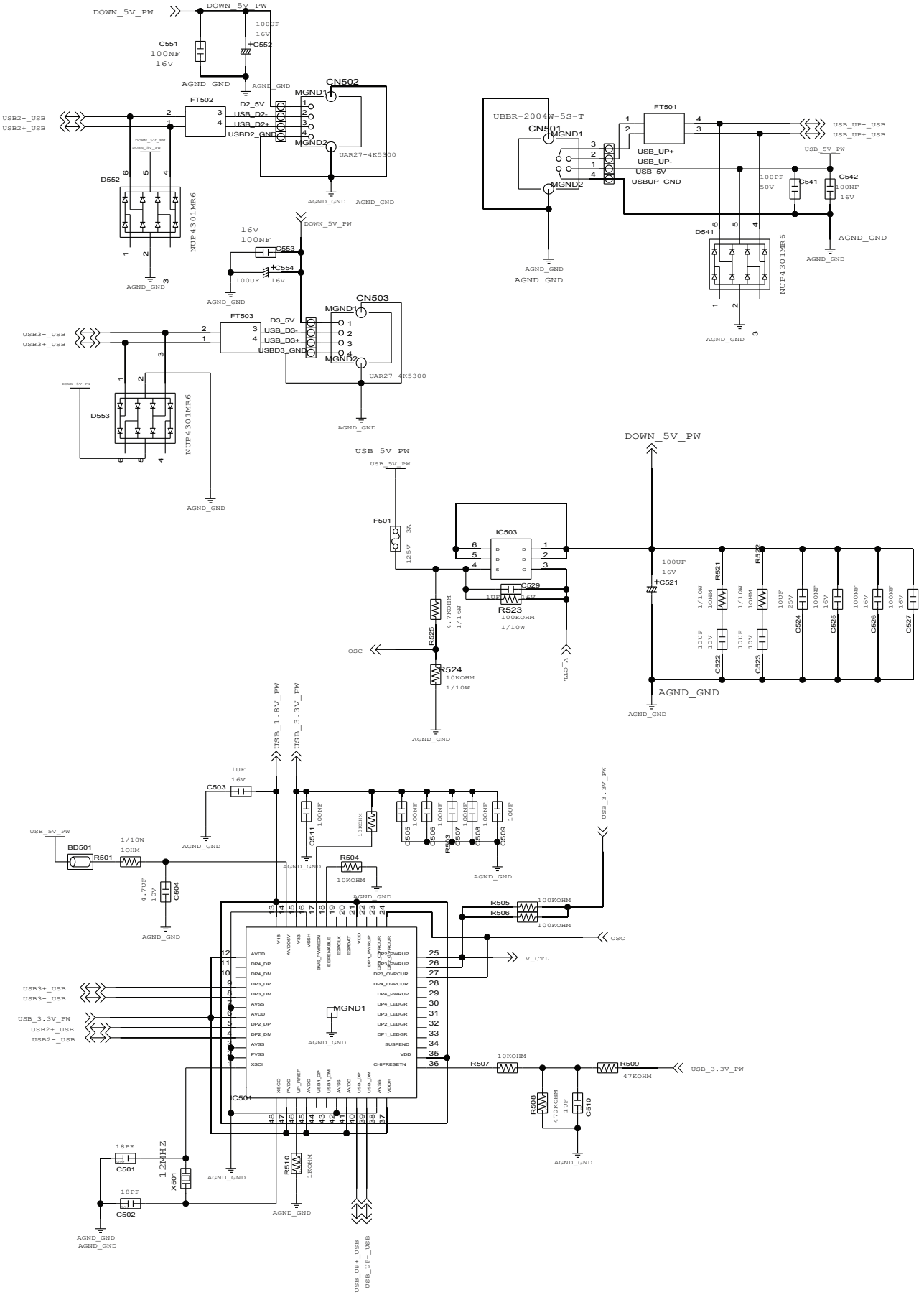
4-5-1.当扬声器或耳机无声音输出时的电路图



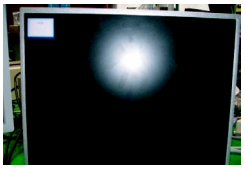
4-6.当无 USB 数据输出时

征兆	CN502 或 CN503 上无 USB 数据输出。
主要检查点	-检查 CN501 上 USB 输入接线的连接状态。 -检查 USB 输入接线的连接状态。 -检查 CN502（或 CN503）。
诊断	 主板前部 * 对于同类型号，主印刷电路板仅有一个 D-SUB 插孔无 DVI 插孔。 
注意	在主板工作之前确保电源断开。

4-6-1．CN502 或 CN503 上无 USB 数据输出时的电路图



4-7 故障示例及校正措施

故障图片	征兆和校正措施	备注
	征兆：无法识别DVI信号。 原因：由于DVI DDC未被输入到显示器中，电脑无法识别模式信息时会发生此故障。 校正措施： 输入DVI DDC	*请参阅关于DVI DDC输入信息的培训手册。
	征兆：打开显示器时，无论是否有信号，连续显示全白图案。 原因：由于LVDS接线发生故障或错误连接，在仅供应灯电源并且未向面板输入视频信号时会发生此故障。 校正措施：更换或重新正确连接LVDS接线，以能够将视频信号输入到面板中。	*全白图案是TN面板的一个特点，可在未输入视频信号时显示。
	征兆：在连接DVD时，屏幕有噪音发出。 原因：HDCP键不能被插入。 校正措施：启用HDCP键。	

4-8. 调节

4-8-1. 维修调节条件

1.维修调节前的注意事项

1）检查维修调节的设备是否操作正常。

2）为了安全在足够大的空间处拆卸显示器。

3）在拆卸前预备一块软垫。

2.进入维修模式

进入：菜单 → 亮度 0 → 对比度 0 → 按下回车键五（5）秒。

退出：关闭电源 → 开启电源

3.更换板后的基本维修项目

1）检查 PC 颜色调节状态。

2）DDC 输入（模拟和数字输入）

3）检查此型号是否有合适的 MCU 代码输入。

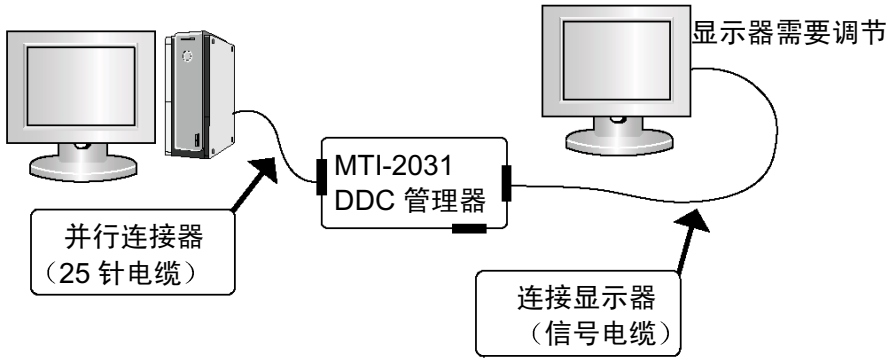
4）进入维修模式后硬关机并进行复位。

4. DDC EDIT 数据输入

1）在 AD 板代码更新时使用。

2）通过三星电子质量控制部门下载适于该机型的 WinDDC 程序、DDC 输入程序、十六进制和 DDC 文件。

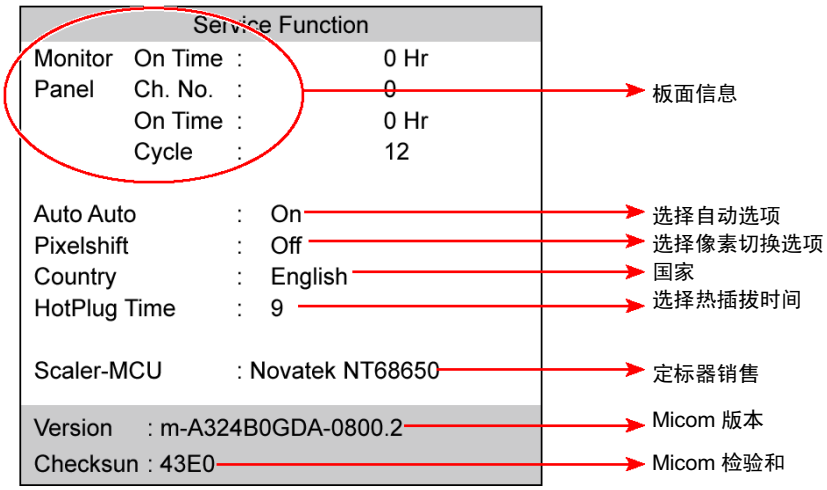
安装以下装置并输入数据，如图所示。



4-8-2.维修功能规格

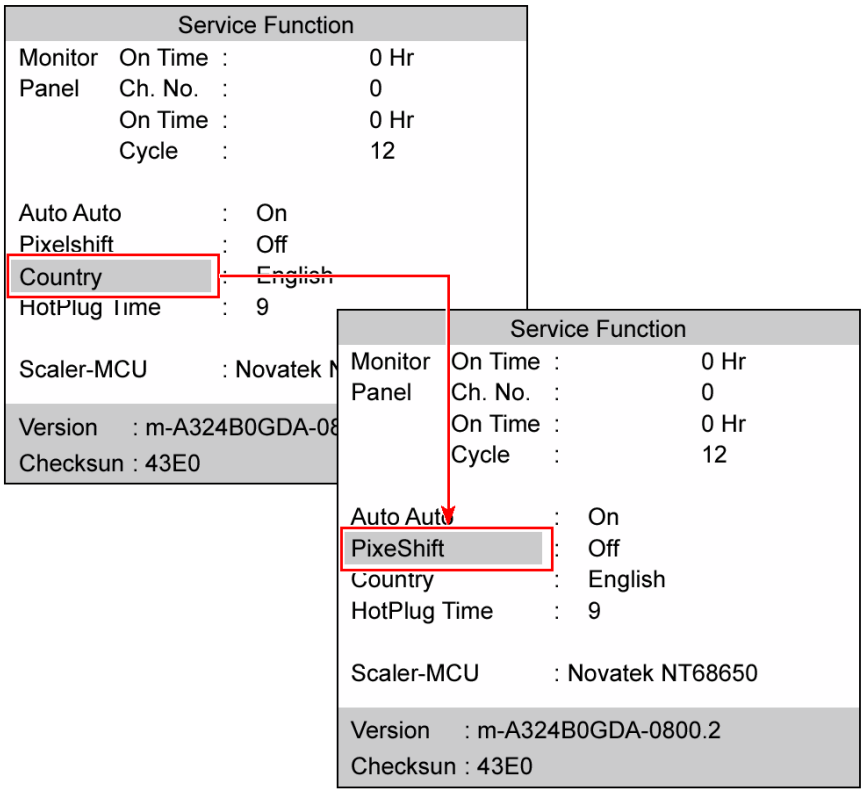
■检查代码版本

1. 进入 SVC 模式后检查 MCU 代码版本和检验和。
2. 进入 SVC 模式
   - 调节亮度和对比度值为 0。
   - 按下回车键五（5）秒
   - SVC 功能在 OSD 上显示。
   - 如要退出 SVC 功能，关闭电源。
3. 安全模式
   - 当输入信号比产品所支持的频率信号要高时，安全模式会给用户一些时间（1 分钟）更改显卡的设置为建议采用的模式设置。

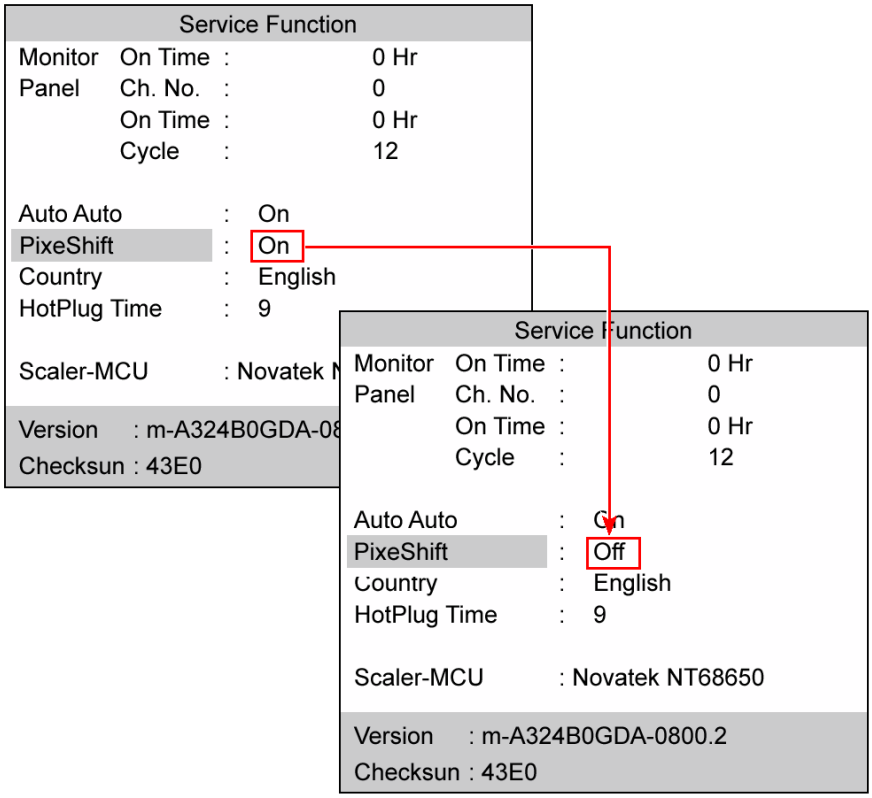


■维修模式（移动）

1.按下+按钮可移动到其它选项。



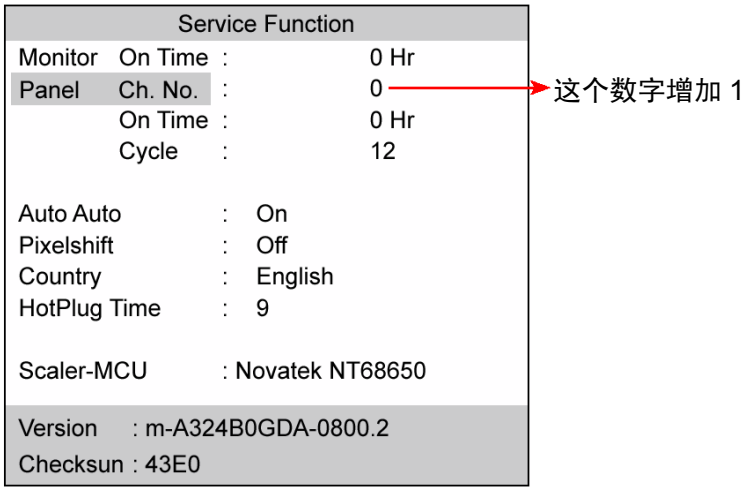
2.按下-号按钮，更改设置到开或关。



■在更换面板时

更换面板后，选择面板项目并按下菜单按钮五（5）秒。

板面 Ch.No 将会增加 1，且时间信息会更改到 0。



■ 输入 DDC 数据

使用 DDC 管理器 MTI-2050 版本或更新。

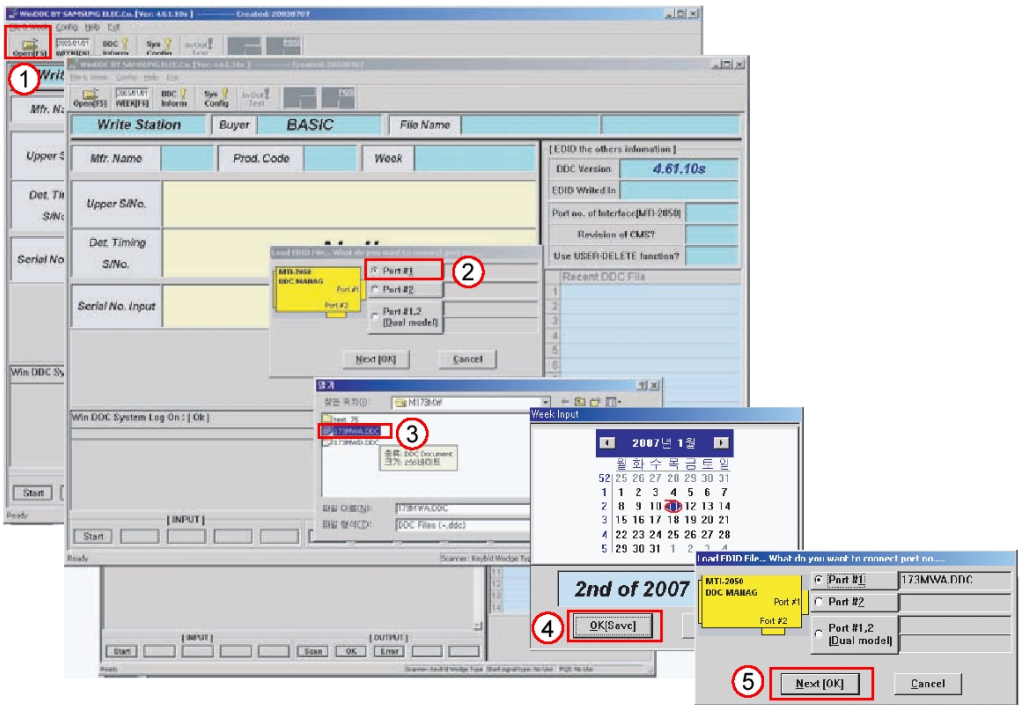
1）点击打开[F5]图标。

2）选择一个端口。

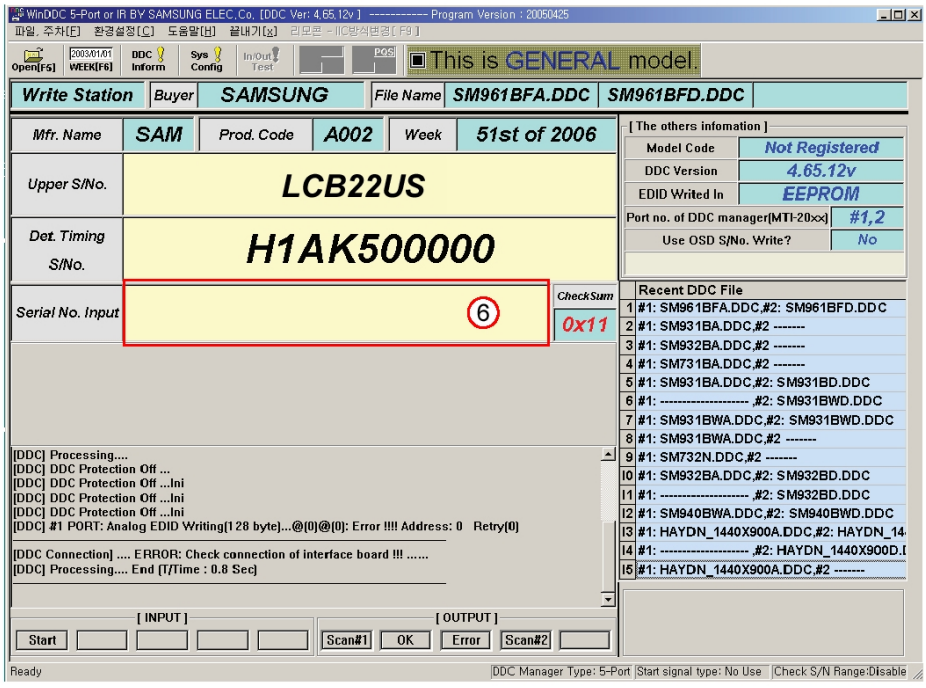
3）打开一个 DDC 文件。

4）选择一个日期并点击确认[保存]按钮。

5）点击下一步[确定]按钮。



6）输入系列编号并按下确认键。

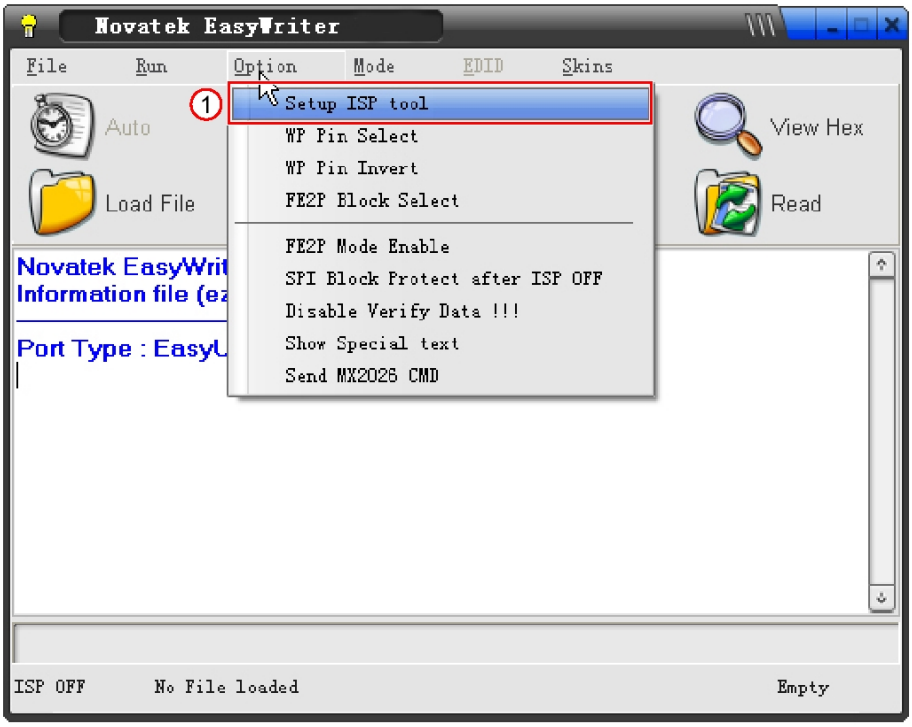


*输入模拟数据后，再输入数字数据，重复此过程 2 到 5 次。

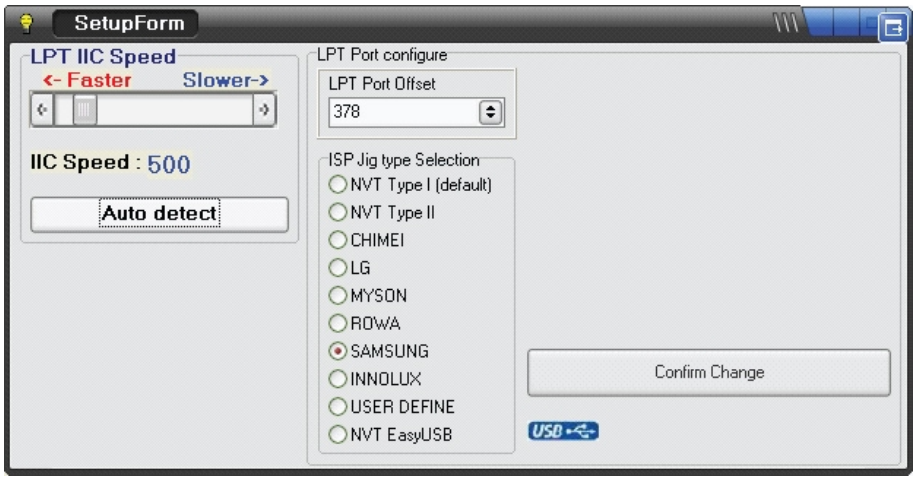
■输入 MCU 数据

1）打开“Easywriter”后检查如下选项

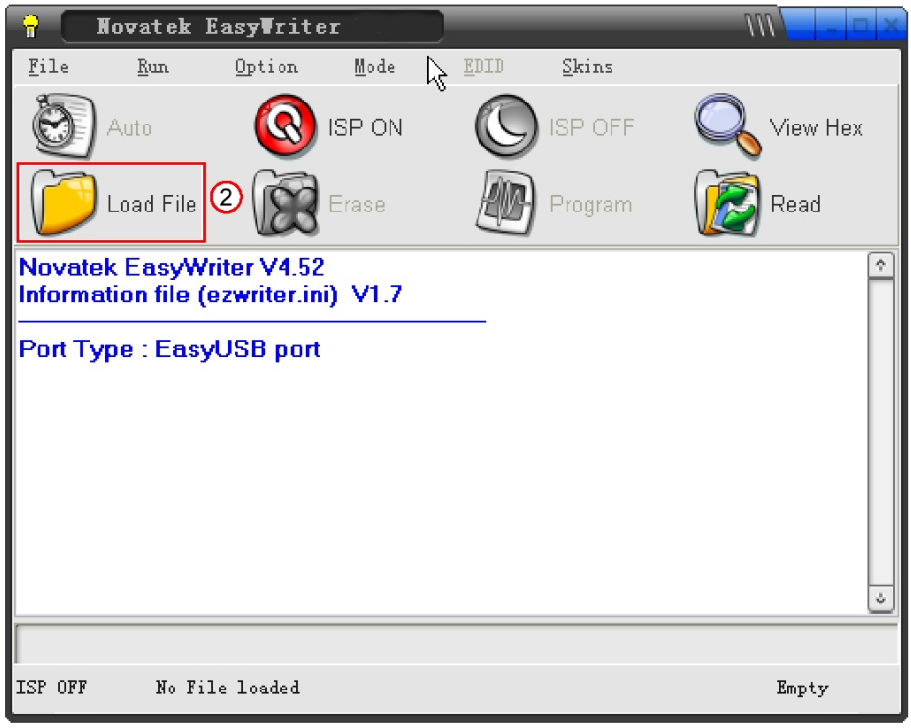
-选项：设置 ISP 工具



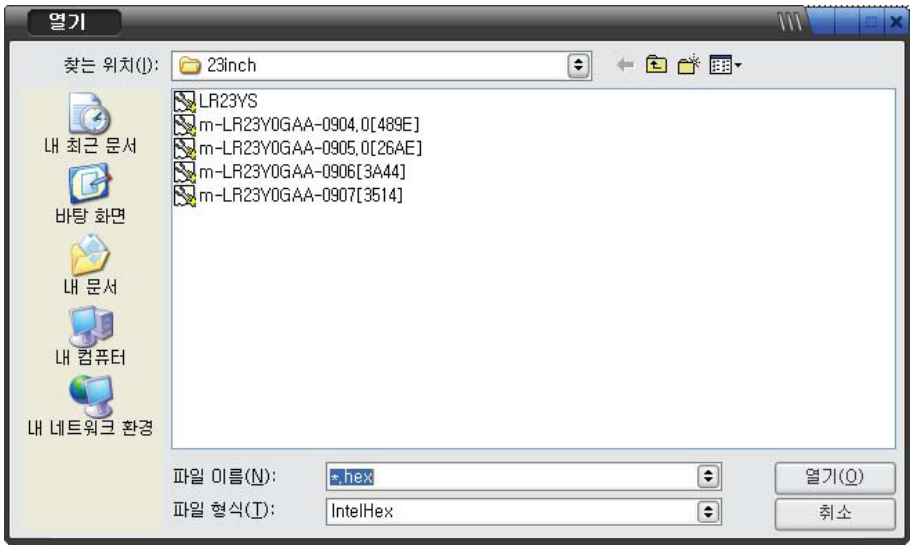
- LPT端口偏移：378
- ISP工具类别选择：SAMSUNG
- 自动检测
- 确认更改



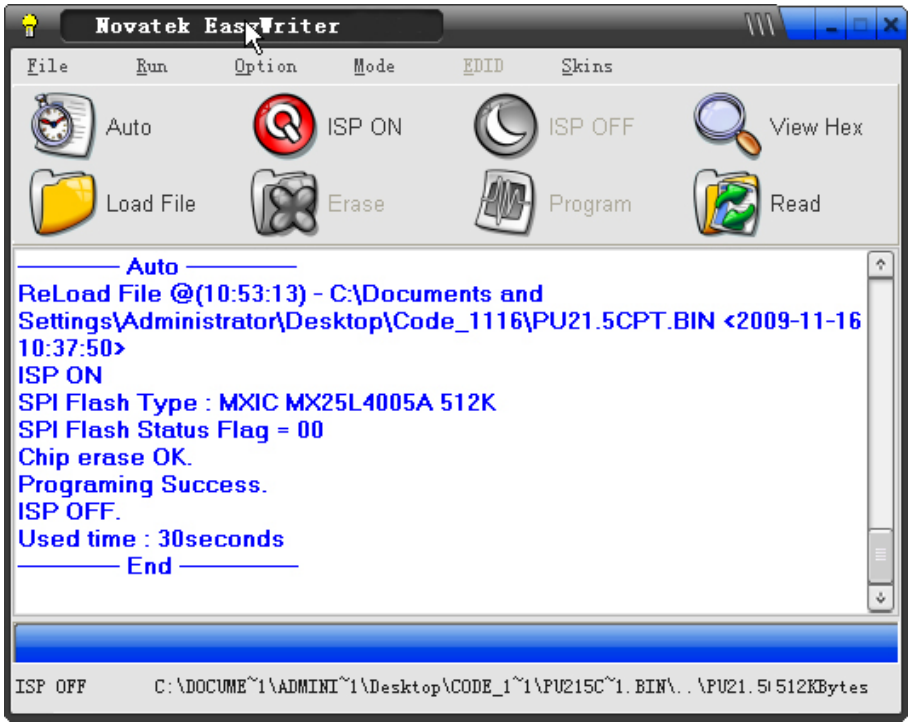
2）点击载入文件按钮。



3）选择 MCU 代码文件，并点击打开[O]按钮。



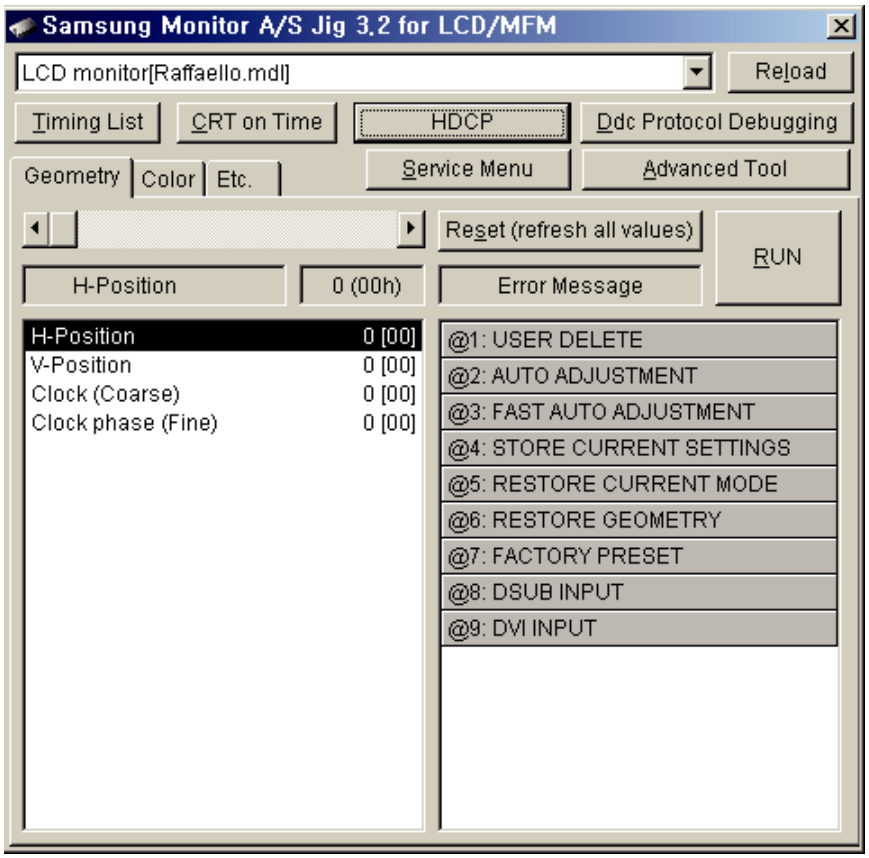
4）点击自动按钮。



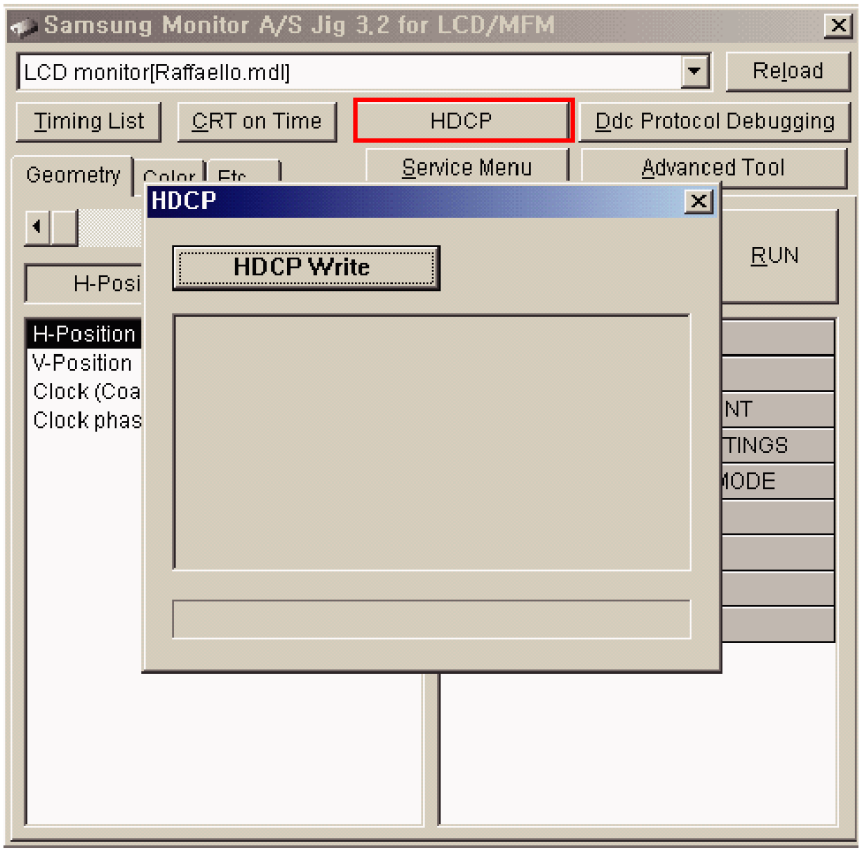
5）当进程和校验完成后，硬关机并再次启动。

■ **输入代码（HDCP）**

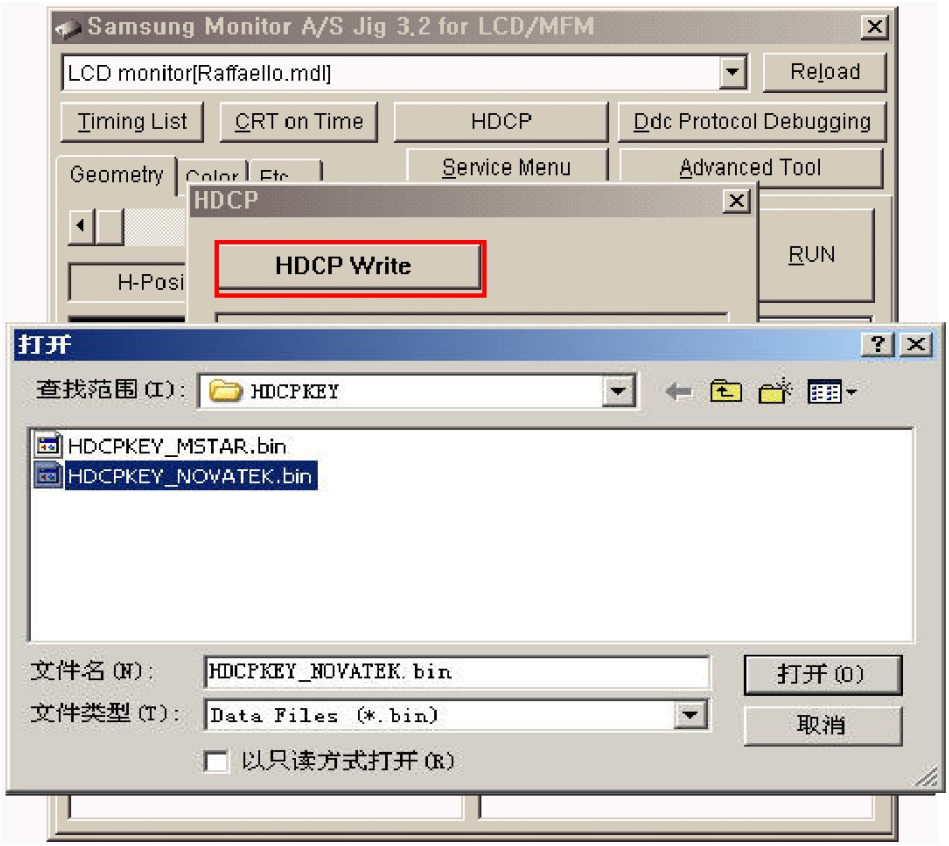
1.运行 service.exe 文件。



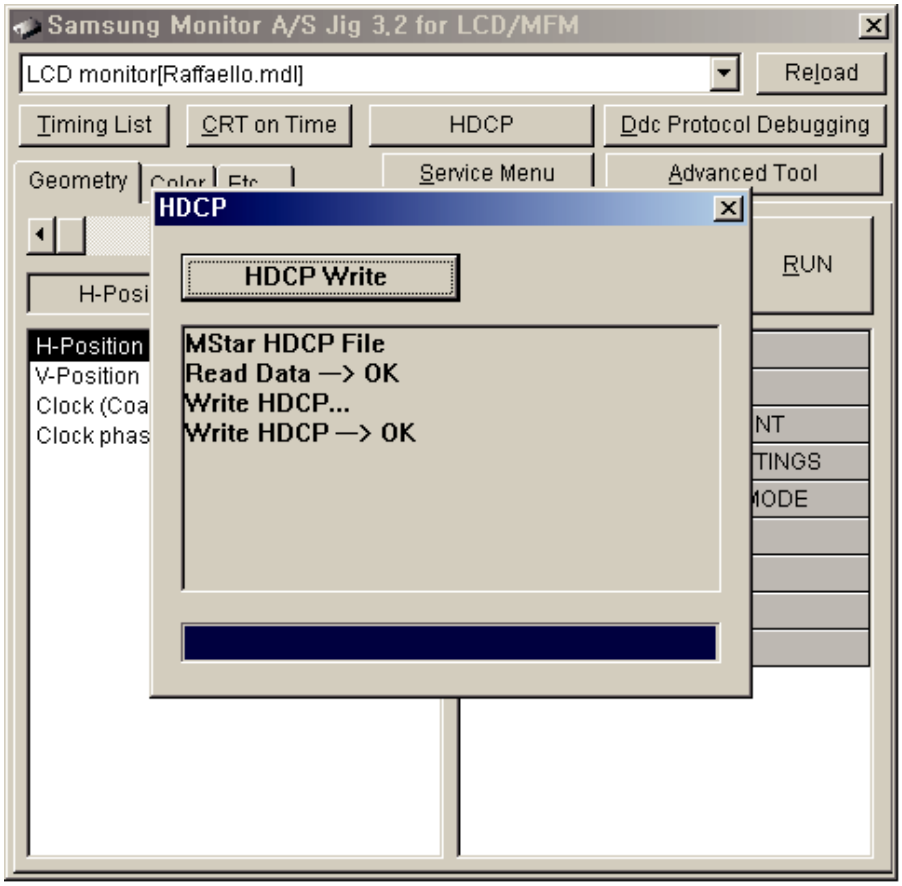
2.点击 HDCP 按钮。



3.点击 HDCP 写入按钮并选择 MStar_HDCP 按键。



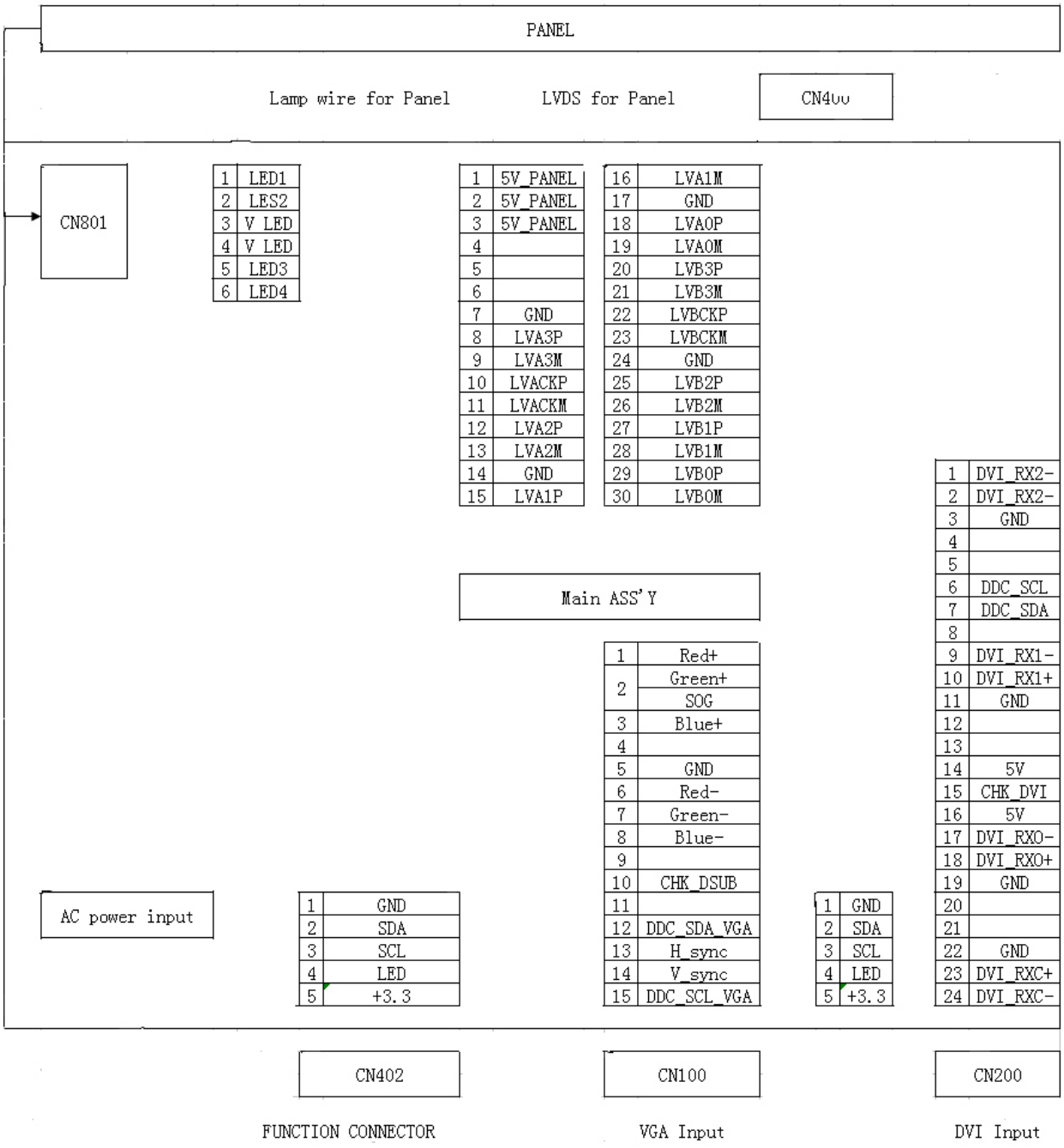
4.输入 HDCP 键完成。



备忘录

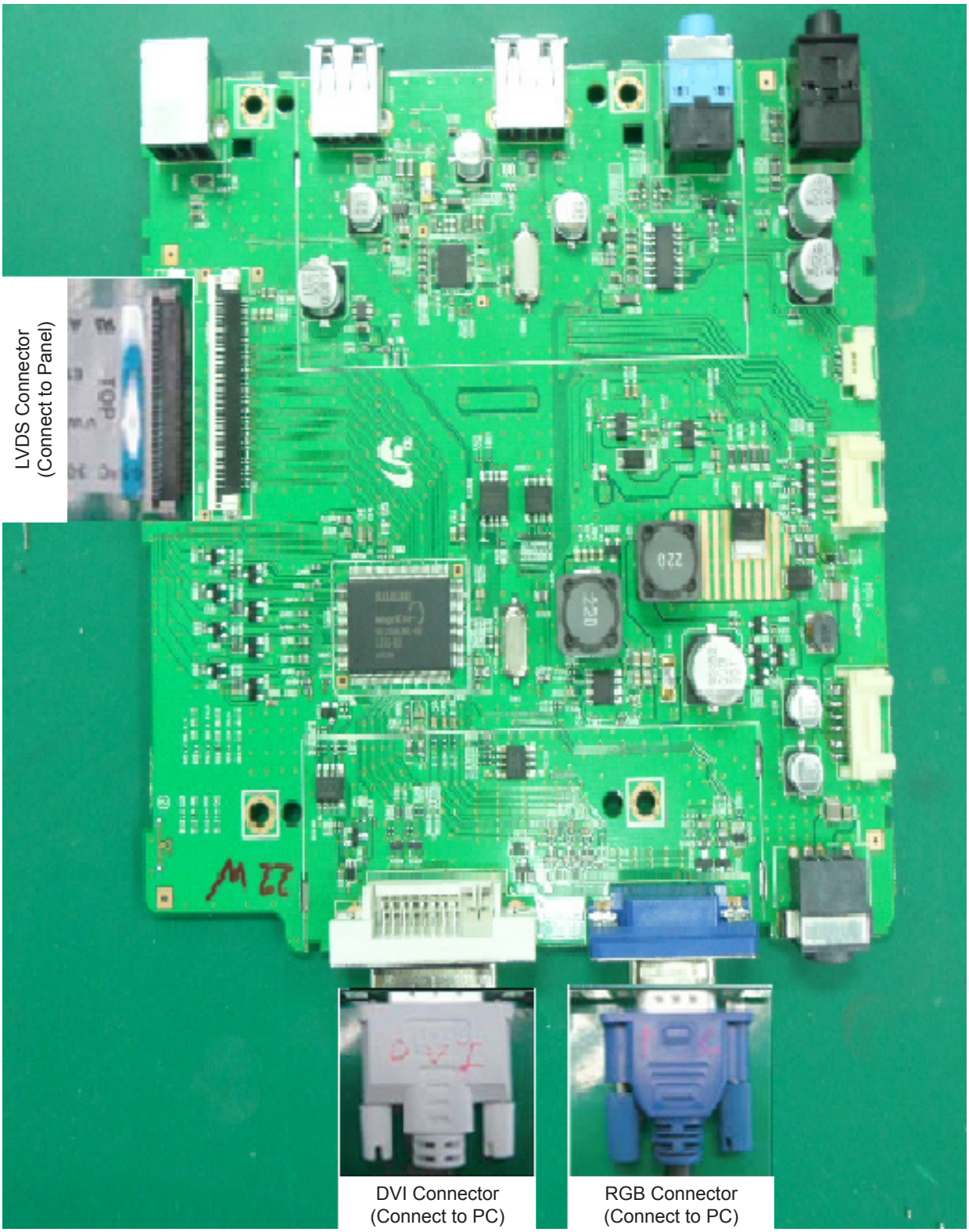
5. Wiring Diagram

5-1. Wiring Diagram



5-2. Board Connection

* For analog model, main PBA just has D-SUB Jack, no DVI Jack.



5-3. Connector Functions

Connector	Functions
CN101 ↔ CN600	Supplies 5V from the power board to the main board and transmits the PWM output from the power board to the inverter. *When a problem occurs: The No Power and Blank Screen errors may occur.
CN1 ~ CN4 In	Transmits the lamp current (110mA ~ 112mA) generated in the inverter to the lamp of the panel. * When a problem occurs: The Blank Screen error may occur.
CN102	Transmits the input power of 90 to 263V to the power board. * When a problem occurs: The No Power error may occur.
CN101	Connects to the function board. * When a problem occurs: The No LED screen and Function failure errors may occur.
CN102	VGA signal input terminal * When a problem occurs: The No RGB output error may occur.
CN400	Transmits the LVDS signals from the main board to the panel. * When a problem occurs: The Blank screen and No Power errors may occur.